



Traffic Signal Upgrades & Centralized Transit Signal Priority



Current Traffic Signal Upgrade Projects

- Traffic Signal Control Platform Upgrade
 - SMART SCALE Funding: \$3,000,000
 - Anticipated Completion: Late 2021
 - Scope: Upgrade traffic controller hardware and software at all signalized intersections to McCain 2070LX with D4. Upgrade traffic control central system software to the KITS Advanced Traffic Management System by Kimley-Horn and Associates.
- Advanced Traffic Management System Upgrade, Phase 4C
 - CMAQ Funding: \$2,106,646
 - Anticipated Completion: Late 2021
 - Scope: Upgrade traffic signal communication network from serial to Ethernet communications (134 intersections), expand network using wireless fixed WiFi technology (9 intersections), install traffic surveillance cameras (89 cameras), and upgrade vehicle detection systems to thermal cameras or wireless magnetometers (11 intersections).



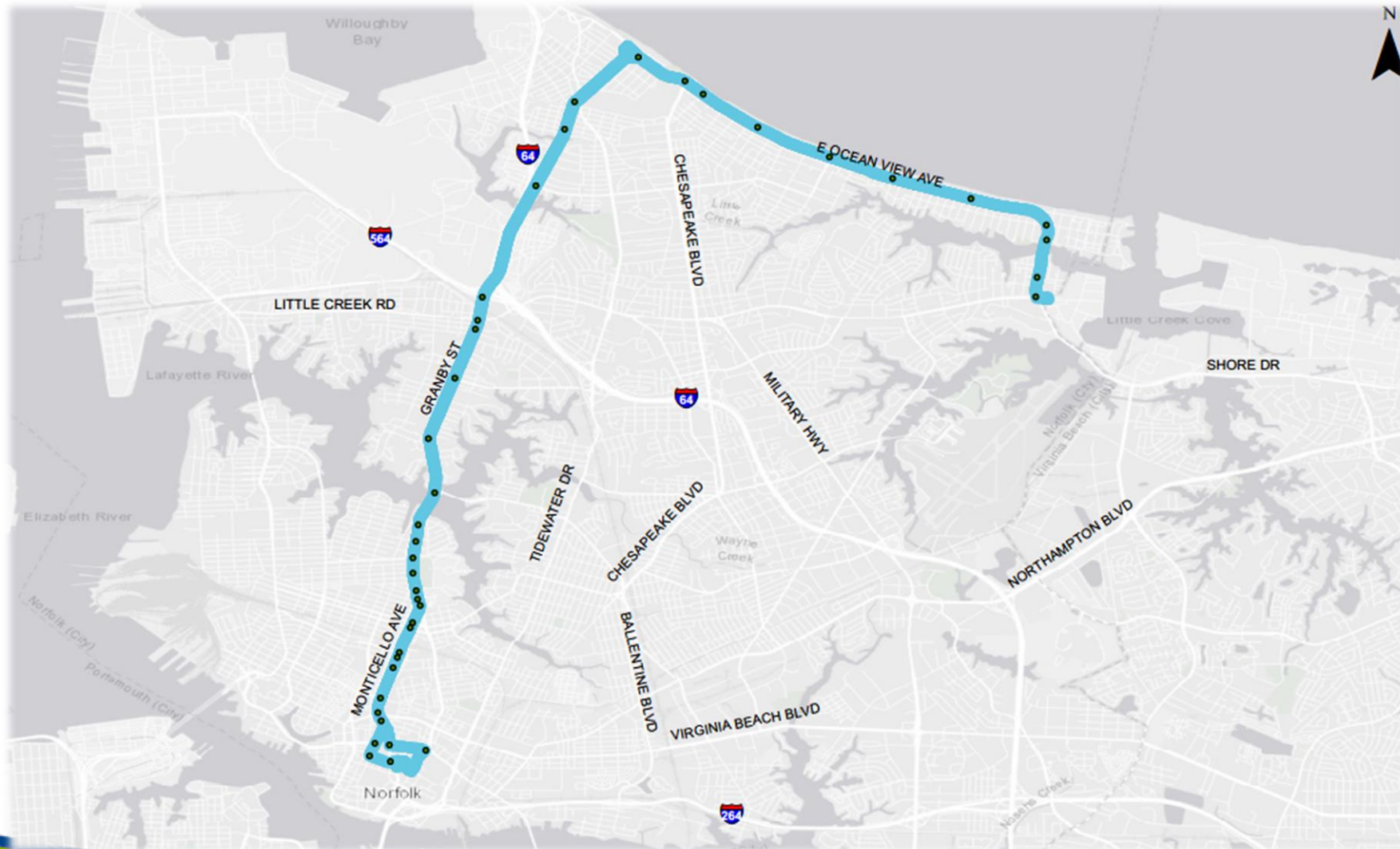
Future Traffic Signal Upgrade Projects

- Traffic Signal Communications Upgrades (CMAQ FY25-26)
- Traffic Signal Detection Upgrades (CMAQ FY25)
- Transportation Information & Decision Support System (CMAQ FY25-26)
- Centralized Transit Signal Priority (SMART SCALE FY28)

Funded SMART SCALE project: Centralized Transit Signal Priority (TSP)

- FY22 Application, Smart Portal Project ID 6678
- Cost: \$1,992,292 (Funding Available FY28)
- SMART SCALE Score: 68.2
- Scope: Design, configuration, and integration of centralized transit signal priority (TSP) for 40 signals along HRT Route 1. TSP system design will be integrated with Norfolk's new central system software (CSS) and utilize real-time bus location, speed, and heading data to place priority calls for approaching buses via the CSS to enable TSP signal timings.

Norfolk Planned TSP – HRT Route 1



TSP Benefits

- TSP uses technology to make more efficient use of available roadway and transit capacity and optimizes signal operations for multimodal activity.
- **Roadway Safety** : TSP has been proven to reduce crashes, particularly Property Damage Only (PDO) crashes due to a reduction in unnecessary stops and generally smoother traffic flow.
- **Congestion**: TSP reduces congestion by reducing delays for transit vehicles (and adjacent traffic) at traffic signals. Congestion is also reduced for mixed traffic along the corridor through signal optimization.
- **Transit Operations**: Reduced congestion and delays for transit vehicles results in increased reliability, improved travel times, increased ridership, cost savings, and emission/air quality benefits.
- **Travel Demand Management**: TSP reduces delays and increases travel time reliability for transit vehicles, which can make transit a more attractive mode choice and increase transit ridership. Reduced travel times supports more frequent bus service on the corridor.
- **Environment**: TSP reduces bus emissions and fuel consumption through reductions in stops and delay for transit vehicles.

Centralized TSP

